

(remote) Standard Model from low-scale E8 grand unification in ten dimensions

The construction and general implications of a model with complete supersymmetric unification of the Standard Model matter content, interactions and families' replication into a single E8 gauge superfield in ten dimensions is presented. The gauge and extended Poincaré symmetries are broken through compactification of the $T^6/Z_3 \times Z_3$ orbifold with Wilson lines, which reduces the original symmetry and matter content into those of the Standard Model plus additional heavier states. Proton decay can be suppressed automatically while the compactification scale may be as low as 10^9 GeV, so that the corresponding GUT-scale physics may be potentially accessible and testable by future collider measurements.

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